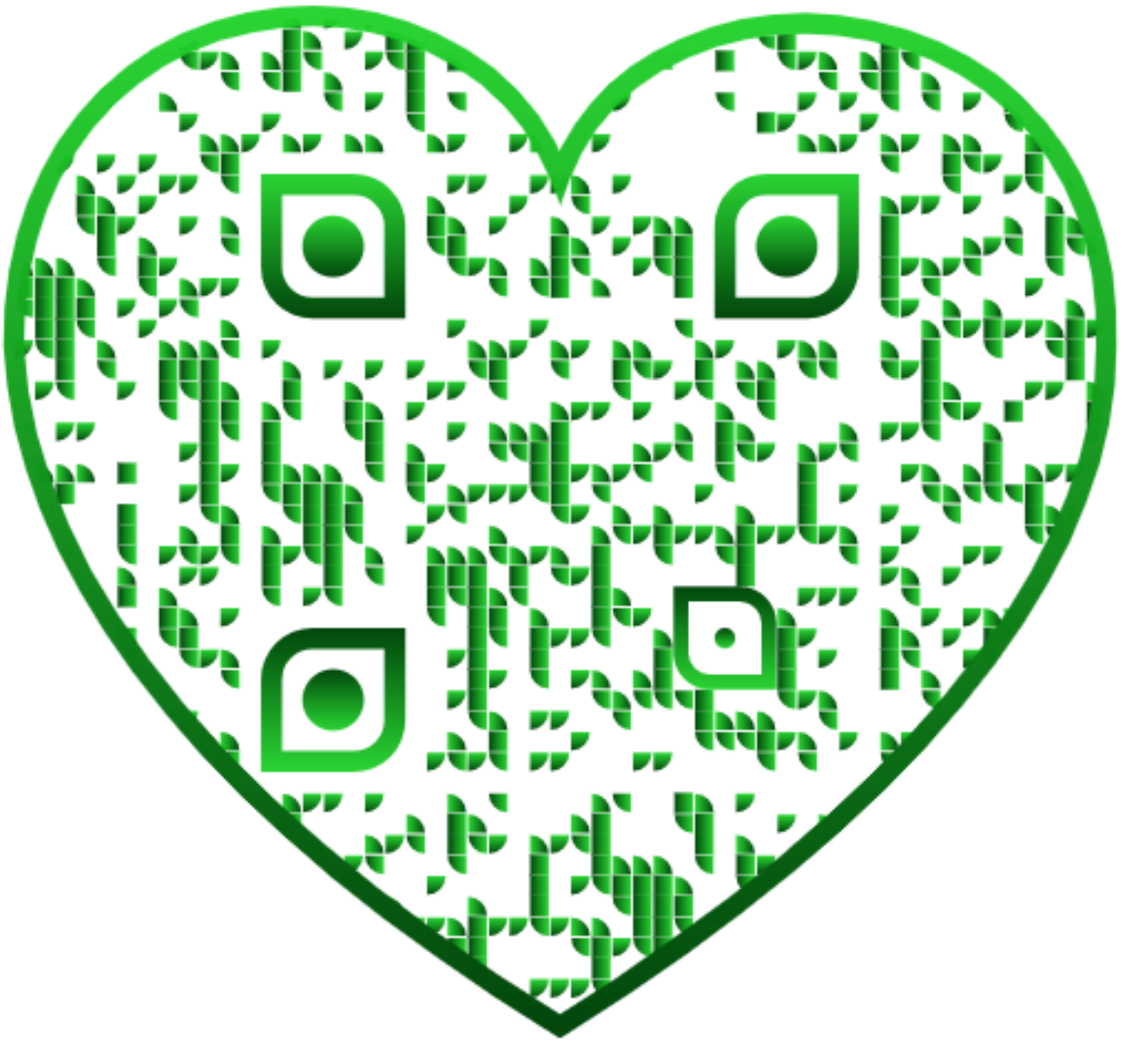
COC EXAM QUESTION

1. A patient **came** to a pharmacy **with** a **prescription** for the **extemporaneous preparation** of **3%** hydrogen **peroxide**. The pharmacist told the patient that the Medicine can be prepared at the pharmacy, but there is no bottle for packaging. The patient wanted to buy the bottle from a nearby supplier and asked the pharmacist the type of bottle required.

   What is the **most** appropriate **type** of **bottle**?

   A. Opaque plastic dropper bottle
   B. Glass bottle with tight-fitting cap
   C. Metal bottle with tight-fitting cap
   D. Amber glass bottle with screw cap



2. A junior pharmacist working in an **outpatient clinic repackages** medicines using **polyvinyl chloride** (PVC) plastic material. In the process, the pharmacist is concerned that some of the drugs interact with plastic packaging materials.

   What are the most common drugs that interact with chloride (PVC)?

   A. Diazepam, vitamin A acetate, hydralazine
   B. Pyridoxine, Paracetamol, Nifedipine, Ionized
   C. Vitamin D3, Heparin, Prednisolone, Codeine
   D. Phenobarbital, Hydrocortisone, Methyl Paraben

3. A pharmacist working in a hospital received three different batches of **Acetylsalicylic acid** 325mg tablets with different expiry dates. The pharmacist then started to keep record of the received drugs on **bin cards.**

What is the most appropriate way to fill the **bin** cards?

A. Record each batch on the same bin card
B. Record each batch on a separate bin card
C. Record consecutive batches on the same bin card
D. Record products with comparable expiry dates on the same bin card

4. In a hospital **intensive care unit** (ICU), **medication error** occurs in 30% of the head of inpatient pharmacy to design a **dispensing** technique with least patients taking a drug with **narrow** therapeutic window. An internist approach possible errors in poor infrastructure settings.

   What type of **dispensing** technique should be designed by the pharmacist?

A. Bulk ward stock
B. Unit-dose system
C. Individual medication
D. Automated medication

5. The pharmacy **store** in a **referral** hospital uses a **cyclic stock** counting approach the store manager wanted to select some medicines that can be **counted** more than **once in a year**. To select the priority medicines, the store manager conducted an analysis of the total cost and total volume of the medicines in the previous year.

   What **kind** of **analysis** is most likely conducted by the store manager?

A. ABC
B. CBA
C. CEA
D. VEN

6. A health center pharmacy **employs** a system of **periodic inventory control** in which stocks are replenished up to a **pre-established** level. No running stock records are kept and the only stock control document is a **pre-printed sheet** showing each item, its description, the unit of issue, and the recommended maximum stock level for that item.

   What relevant **inventory** control system has been used in the health center?

   A. Double-shelf system
   B. Imprest system
   C. Indent System
   D. Pull system

7. In a certain district, more than **200** people were **injured** due to a **land slide**. Most of the **casualties** are coming to your hospital. A pharmacist working in the dispensary received a **verbal** order of certain vital medications.

   What appropriate **measure** should the pharmacist take?

A. Enforcing the prescriber to bring a prescription paper
B. Recommending the prescriber to have the medicine from the store
C. Dispensing the drug and register it as OTC medication
D. Dispensing the drug and get a written confirmation later

8. A physician **working** at the **inpatient** department **prescribes** 1gm of **Ceftriaxone** injection IV BID for one

day for an admitted patient. **Ceftriaxone** is only available as 0.25 gm per **vial** in the dispensary.

What actual amount of Ceftriaxone should be dispensed?

A. 8 vials of 0.25gm Ceftriaxone
B. 6 vials of 0.25gm Ceftriaxone
C. 4 vials of 0.25gm Ceftriaxone
D. 2 vials of 0.25gm Ceftriaxone

9. An **experimental** pharmacologist **investigating** an **ant-diabetic** activity of selected medicinal plant conducted **safety evaluation** of **extract Y**. Up on experimentation he observes that the extract **killed half** of the tested mice at a dose of **60 mg/ml** and also **lower blood glucose** level in **half** of experimental mice at a dose of **20** mg/ml.

What is the **therapeutic index** of **extract** Y

A. 1/3
B. 1/2
C. 2
D. 3

10. A pharmacist working in a **community pharmacy** contacted by a patient having a prescription dictating iron solution **with 55** mg of **elemental** iron. The formulation available in the dispensary was **5** mg elemental iron in 1 teaspoonful.

How many **milliliters** of **solution** should be dispensed?

A. 45 milliliters
B. 55 milliliters
C. 65 milliliters
D. 75 milliliters

11. A 35-year-old **female** is diagnosed for **febrile seizure**. She comes with a **prescription** containing **Phenobarbital** with the appropriate dosage. She is taking **oral contraceptive** pill for a long period of time. She is not voluntary for other family planning methods including condom. The pharmacist communicates the issue of drug interaction to the prescriber and the prescriber asks the pharmacist for alternatives.

What should be the **response** of the pharmacist?

A. Increasing the dose of Phenobarbital
B. Increasing the dose of oral contraceptive pill
C. Decreasing the dose of oral contraceptive pill
D. Decreasing the dose of Phenobarbital

12. A **physician** ordered a patient to be on a **sustained** release preparation of **drug X** to maintain average plasma concentration of **10 mg/ml**. The **volume distribution** and the **half-life** for drug **X** are estimated to be **15 Liter and 0.5 respectively**. The **fraction** of drug X absorption is assumed as **2** and to be given every 6 hours.

    What doses of drug X should be administered?

    A. 425 mg
    B. 325 mg
    C. 225 mg
    D. 125 mg

13. A patient **weighing** 50 kg was **diagnosed** with systemic fungal infection. Physician prescribed **Amphotericin** B **1.5 mg/kg/day** for the patient.

What total dosage of Amphotericin B should be dispensed for the patient daily basis?

A. 105mg
B. 95 mg
C. 85 mg
D. 75mg

14. A **pharmacist** working in **dispensary outlet encountered** an **extemporaned** prescription that dictates for preparation of **5% tetracycline** ointment for **topical** use. The pharmacist prepared the medication as per the prescription and dispensed the medication correctly with appropriate counseling. One we later, the patient came again and **complained** for **lack of improvement** even though he took the medication as per the instruction. Upon the examination the formulation, the preparation was found to form caking.

What is the **relevant cause** for this formulation problem?

A. Lack of stability
B. Microbial contamination
C. Inappropriate proportion
D. Incorrect API

15. A pharmacist **working** at **outpatient** pharmacy dispensary was give prescription that dictates the preparation of **3% Sodium Bicarbonate** BP **in 1 sterile** water.

    How much Sodium **Bicarbonate** will be needed to prepare the product?

    A. 0.03 gm
    B. 0.003 gm

C. 0.3 gm

D.0.33 gm

16. A Pharmacist working in a certain **pharmaceutical industry** was asked to **prepare 10** capsules of **Verapamil** each **containing 20** mg **active pharmaceutical ingredient** with a total weight of **Verapamil 200** mg BP.

How can the **quantitative** particular be expressed on the label?

A. Verapamil BP 20 mg Lactose BP 100 mg
B. Verapamil BP 100 mg Lactose BP 200 mg
C. Verapamil BP 200 mg Lactose BP 20 mg
D. **Verapamil BP 20 mg Lactose 13P 180 mg**.

17. A patient has a **fungal infection** on his **foot**. The physician prescribes **potassium permanganate** BP **0.2 %w/v**. The prescription dictates for the preparation of **150** ml of this solution.

    What amount of potassium permanganate will be enclosed in **every 100** ml of the solution?

    A. 100 mg
    B. 150 mg
    C. 200 mg
    D. 250 mg

18. A patient was diagnosed with acute coronary syndrome and the following drugs were prescribed.
    - Nitroglycerin, sublingual, 0.4mg every 05 minutes
    - Morphine PO 4mg
    - Aspirin 300mg stat PO then 75mg PO daily
    - Clopidogrel 300mg followed by 75mg/d PO

Which medication should be packaged with a **tightly fit glass**?

A. Aspirin
B. Clopidogrel
C. Nitroglycerin
D. Morphine

19. A mother of **five**-year-**old** child came to a **dispensary** with **two prescriptions**: Mupirocin **2% ointment** for the **child impetigo** and **Magnesium Trisilicate** for **mother's dyspepsia treatment**. The pharmacist **labeled** the drugs and **dispensed** to the patient. **Three days** later, she came with her **child** having **diarrhea**.

What important part of labeling has been missed?

A. For external use only

B. Avoid exposure to sunlight
C. Apply thin film on the lesion
D. Keep out of the reach of children

20. A 42-year-old **male diagnosed** with **psoriasis** and was prescribed **Betamethasone Dipropionate cream** 0.05%. The pharmacist **labeled** and **provided** the drug to patient.

What **message** should be **included** on the labeling to **minimize side** effect?

A. For external use only
B. To be applied thinly
C. Keep out of the reach of children
D. Discard if lasted more than 4-months.

21. A newly **hired** pharmacist started working in dispensary outlets. He is be **guided** by his seniors on how to dispense medications including **labeling** and **packaging**.

What important issues should be **advised during packaging** of medicines?

A. Suppositories should be packaged in paper made containers
B. Tablets should be packaged with collapsible tubes
C. Ointments should be packaged with paper made containers
D. Liquids should be packaged in light resistant glasses

22. A 35-year-old **woman**, who is a **type**-1 **diabetes** mellitus patient, comes to **dispensary** with a

prescription **stating insulin** injections for 2 months period.

What is the most **relevant** counseling about **storage** of insulin?

A. Store the medicine in the hot place
B. Store the medicine in dry place
C. Store the medicine in a refrigerator
D. Store the medicine in any place at home

23. A 30-year-old **male** patient has come to a dispensary with a prescription **Metronidazole** 500 mg PO TID for 7 days. In the dispensary, Metronidazole available in 250 mg strength.

How do you label the medicine before dispensing?

A. Take three capsule at a time with eight hour difference
B. Take two capsules at a time with eight hour difference
C. Take six capsule a day every twelve hour difference
D. Take three capsule a day every twelve hour difference

24. A 29-years-old **lady** came to the dispensary to consult why she be cam pregnant **unintentionally** while she was highly adherent to her **contraceptive pills**. When you assess, you found that she was on **anti-TB** therapy for weeks on drug regimen containing Isoniazid, Rifampicin, Pyrazinamide Ethambutol

What was the **responsible** drug for **failure** of the **contraceptive**?

A. Isoniazid
B. Rifampicin

C. Pyrazinamide
D. Ethambutol

25. A **client** comes **with prescription** containing **Mebendazole** for **helmin infection**. The pharmacist dispensed **without** telling any **message** to the client.

What important counseling has been missed on the direction to use the drug?

A. Swallow the intact tablet with a glass of water
B. Chew well and then swallow with a glass of water
C. Keep under the tongue and swallow the residue with a glass of water
D. Keep buccally and swallow the residue with a glass of water

26. A patient comes with **prescription** containing **Ephedrine** and **Theophylline** as regular maintenance therapy for her **recurrent asthma**. The client wants you tell her about **dietary restrictions**.

What is the most appropriate **advice** to this patient for the course of therapy?

A. Avoid milk products
B. Avoid coffee and tea
C. Minimize sugar and salt
D. Avoid banana

27. A **three**-week-**old child** with **abdominal** cramp, fever, bloody diarrhea has been diagnosed with **bacillary dysentery**. His mother came to a dispensary with prescription ordering **sulfamethoxazole** plus **Trimethoprim** 100/20mg BID seven days.

What is the most likely **expected** risk of **dispensing** the drug?

A. Bilirubin induced brain damage
B. A gray discoloration and hypertension
C. Liver and kidney damage
D. Flushing, nausea and tinnitus

28. 28-year-old **pharmacist** a hospital had a **habit** of abusing **Methadone** was diagnosed with **pulmonary tuberculosis** and **treated** with **Rifampicin**, **Isoniazid**. Pyramthambutol Three weeks later the pharmacist came back with **withdrawal** symptoms

What is the most likely do interact that led to the **withdrawal** symptom?

A. Methadone – Ethambutol

B. Methadone - Isoniazid
C. Methadone - Rifampicin
D. Methadone-Pyrazinamide

29. A prescriber wants you to recommend on an **antipsychotic** drug of choice for his 59-year-old **schizophrenic** patient being concerned of drug-drug interactions the patient is on effective **Hydrochlorothiazide** therapy for his **stage I hypertension** but occasionally shows manifestation of mild hypotension.

What is the most appropriate **antipsychotic** drug to this patient?

A. Haloperidol
B. Clozapine
C. Chlorpromazine
D. Thioridazine

30. A 25-year-old **male diagnosed** with **stable angina** came with prescription containing **Propranolol**. You asked him about his medication history, and the patient mentioned that he is on daily therapy of **Salmeterol** for his recurrent asthma.

Which **undesirable** outcome might happen with this prescription?

A. Increased toxicity of Salmeterol
B. Failure of Salmeterol therapy
C. Failure of Propranolol therapy
D. Increased toxicity of Propranolol

31. A 45-year-old **woman** diagnosed with **heart failure** was taking optimum dose of **Digoxin** and **Furosemide** for the last two months. She comes to a hospital

complaining of **shortness** of **breath** and **rapid palpitation**. The physician **suspects** the patient has **atrial fibrillation** and prescribes **quinidine**.

What is the most likely appropriate advice for this patient?

A. Increasing the dose of Quinidine
B. Decreasing the dose of Quinidine
C. Reducing the dose of Digoxin
D. Increasing the dose of Digoxin

32. A 35-year-old female epileptic patient have been taking **Phenobarbitone 100mg** PO BID for last 2 years **combined** oral **contraceptives** as clinical pharmacy you have to evaluate for possible drug-drug interaction between her current medications.

What is the most likely appropriate **source** of information you will use?

A. Abstracting services
B. Text books
C. clinical Studies
D. Review articles

33. A **research** team **within** drug and therapeutic committee were assigned on searching additional published studies about the effect of **selenium** on the **prevention** and treatment of **cancer.**

What is the most appropriate secondary database used for this purpose?

A. PubMed
B. Up To Date
C. Google scholar

D. FDA website

34. The pharmacist in drug information center planned to write a **newsletter** on **adverse** drug reactions of IV fluids.

What is the **first** step the pharmacist should describe?

A. Define the information sources
B. Define the audience
C. Identify constraints
D. Design a newsletter

35. A clinical **director** of the hospital **selected** you to lead the formation of a **panel** to be involved in the **development** of **pediatrics** clinical practice **guidelines**

(CPG) in your hospital. The hospital gives services for more than 10,000 **inpatients**. The most **prevalent** cases are of **infectious** in **origin** and also with other non-**communicable** diseases.

What is the first appropriate **initial** step, the team should perform to prepare the CPG?

A. Conduct a systematic search for evidence
B. Determine the study screening selection criteria
C. Define the clinical questions to be addressed
D. Critically appraise individual studies

36. A nurse working in clinical care about the storage condition of the vaccines containers, what is the most appropriate advice you give for the nurse?

A. Store the vaccines in around -20°C

B. Store the cines in around 25°C
C. Store the vaccines in above SC
D. Store the vaccines in around -2°C

37. As **beginner pharmacist** in a given **health institution**, you may get order from the **sensor pharmacist** to **arrange** drugs in the dispensary so as dispensing process.

What is the most appropriate **arrangement** of the medicine on the shelf?

A. Drugs with the short expiry date in front of the shelf
B. Drugs with long expiry date on top of the shelf
C. Drugs with the short expiry date in the back of the shelf
D. Drugs with the long expiry date in front of the shelf

38. A pharmacist working in a hospital **OPD** dispensary was assigned to carry out documentation activities of the room.

What information is most important to **ensure accountable** and **transparent** transaction?

A. Record all information on the normal prescription in a registration book and dispose the field prescriptions
B. Record all information on the special prescription in a registration book and store the field prescriptions for 01 year
C. Record all information on the special prescription in a registration book and store the field prescriptions for 02 year
D. Record all information on the normal prescription in a registration book store the field prescriptions for 02 year

39. A 25-year-old man was **diagnosed** with **Visceral Leishmaniasis** and prescribed with **Sodium Stibogluconate**. Unfortunately, the drug was out of stock as the disease was not common in the area before. Hence, the patient was sent to other dispensaries with copy of the prescription.

What would be the most appropriate management Method to support the supply management?

A. Documentation of prescription
B. Prescription registration
C. Evaluation of prescription
D. Billing of prescription

40. The pharmacy department head was **conducting** a monthly **supportive supervision** at drug information

center and noticed that a pharmacist in **charge failed** to document some of his **daily activities**.

What is the most likely **missed** documentation?

A. The ultimate question
B. The materials searched
C. The response
D. The follow-up

41. A pharmacist working in a drug information center (**DIC**) of a hospital utilized a **Modified** systematic approach that includes **data evaluation**, **analysis** and **Synthesis** to **provide drug information** to **clients**. While undertaking the activities, the pharmacist **presented** the **competing** view points and considerations.

What would be the most appropriate **next step** in response formulation?

A. Refute the major strengths and present weaknesses
B. Defend the major weaknesses and promote the strengths
C. State the assessment of the literature or information reviewed
D. Reiterate the final assessment in support of the superior viewpoints

42. A 24-year-old **female** student was admitted to a hospital for the past three days after she developed **falciparum malaria** and **currently ready** for discharge following excellent clinical improvement. She has a history of **peptic ulcer disease** and was on **Cimetidine** for the last seven days. While the nurse was **checking** vital signs for discharge, she found **high grade** fever of **38.7**°C. The Nurse told her to stay for one more day

and follow her current condition. The fever is not persistent in nature and **fluctuating** between **37**.**7**°C to **39**.**2**°C for the last 24hrs. Her **WBC** count remains **elevated** and notably, her **eosinophils count** is **increased** with **nearly** normal **neutrophils** count. Despite her high-**grade fever,** she has a relative **bradycardia**. Other laboratory investigations are within **normal** range.

What will be the **suspected cause** of **high grade** fever in this patient?

A. Malaria is relapsing
B. Drug induced fever
C. Other nosocomial infection
D. Brady arrhythmia

43. A known HIV/AIDS patient who is on **HAART** for the past few months' presents to **ART clinic** with fever,

dyspnea, tachypnea and **non-productive cough**. Chest radiography revealed subtle bilateral and **interstitial infiltrates**. A **pulse** ox meter shows minimal **hypoxia** (oxygen saturation of 88%).

What is the most likely **diagnosis** of this patient?

A. Pulmonary tuberculosis
B. Pneumocystis carinii pneumonia
C. Toxoplasmosis
D. Histoplasmosis

44. A pharmacist was evaluating randomized clinical trial articles. During the process he **found** a **topic** conducted to **compare cure** rate of **Omeprazole capsule** and **tablet**. In both of the dosage forms, **200** study **participants** were included For those taking Omeprazole capsule **placebo** tablet was given while for

those taking **Omeprazole** tablet **placebo** capsule was given.

What is the **intention** of including **placebo** formulation in the above study?

A. To reduce selection bias
B. To reduce interpretation bias
C. To reduce performance bias
D. To reduce adverse drug reaction

45. A Pharmacist **conducted** critical **appraisal** of **four** different scientific **literatures** done on hepatocyte **protective** effect of a new drug. The type of those articles were **case-control**, **prospective cohort**, **randomized controlled** clinical trial, systematic review with meta-analysis containing only randomized controlled clinical trial.

What is the **preferred literature** type that can be applied in **practical context**?

A. Randomized controlled trial
B. Prospective cohort
C. Systematic review
D. Case-control

46. There is an **epidemic** of **measles** on certain area and the drug information center pharmacist is asked to give information about **medications** and **prevention strategies** to the community on FM radio.

What is most likely recommended mechanism during transmitting the message?

A. Talking professionally
B. Making conversation hidden

C. Providing excessive information
D. Using the international language

47. A patient taking **Enalapril** for **hypertension** was **admitted** to a hospital with drug **adverse** event which his **physician classified** as "**category A**" and told the nurse to manage accordingly. The Nurse was not sure about "category A" adverse drug event and **asked** you for **clarification**.

What is your most likely response?

A. Extended pharmacological effect
B. Idiosyncratic reactions
C. Chronic exposure
D. Low dosage

48. A 46-year-old patient was **admitted** with the **diagnosis** of **spinal tuberculosis**. He started on daily **Isoniazid** 300 mg, **Rifampin** 600 mg, **Pyrazinamide** 1.500 mg. and **Ethambutol** 1,200 mg. The patient cannot move due to his **lower motor paralysis**. After one week of his admission, he developed deep vein thrombosis (**DVT**). He started management of DVT with **Heparin** 80 units/kg and then 18 units/kg/hr via **infusion** and **Warfarin** 2.5 mg daily. The international normalization ratio (**INR**) values were less than **1.5** up to day five.

What **drug therapy problem** is most likely **identified** in this patient?

A. Rifampin and Warfarin should not be given together
B. The dose of Rifampin is too high since there is enzyme inhibition
C. The maintenance dose of Heparin is too low
D. The dose of Warfarin is too low since there is enzyme induction

49. A 63-year-old **female** patient **diagnosed** with **Stage C heart failure** and an **ejection fraction** of **25%**, is **currently** taking **Lisinopril** 20 mg daily, **Furosemide** 40 mg twice daily, **Digoxin** 0.125 mg daily, and **Carvedilol** 3.125 mg twice daily. Today, she presents with increased **shortness** of **breath**, fatigue, and **ankle swelling**. She also reports a 10 kg **weight gain** over the past week. Her laboratoratory values are significant for **serum potassium** of 5.2 mEq/L (5.2 mmol/l.) and **serum creatinine** of 2.2 mg/dL. (194 µmol/L).

What is the most appropriate **initial intervention** for this patient?

A. Increase dose of Lisinopril to 20 mg twice daily
B. Add Spironolactone 25 mg daily
C. Increase dose of furosemide to 80 mg twice daily
D. Increase dose of digoxin to 0.25 mg daily

50. A 69-year-old **woman** was admitted with the diagnosis of acute **deep vein thrombosis**. She was started management with **Warfarin** 2.5 mg daily and **Heparin** 17,500 IU Sc twice daily. After two days of her treatment, her PTT became **greater** than **140 seconds**. She noted also a blood mixed feces. On complete blood count **hemoglobin** and **Hematocrit** is **normal**. Her current international normalization ratio is within the **normal range**. You suspected adverse drug reaction from her **current** regimen.

    What is the next appropriate intervention for this patient?

    A. Discontinue Heparin and administer a Vitamin k antagonist
    B. Discontinue Heparin and administer a recombinant factor VII
    C. Discontinue Heparin and administer packed red blood cells

D. Discontinue Heparin and administer a Protamine sulfate

51. A 44-year-old patient with history of **deep vein thrombosis** has been taking **Warfarin** 2.5 mg for 6 months with good laboratory control presented to your hospital for routine follow up. Laboratory investigation, shows that the international normalization (INR) value of 4.5.

    What is the most appropriate next step for this patient?

A. Withhold administration of Warfarin

B. Administer Vitamin K via slow intravenous injection

C. Continue with the same therapy

D. Administer Prothrombin complex concentrates

52. A 68-year-old **man** with **stable angina**, who is currently receiving **Simvastatin** 40mg daily with well controlled lipid levels (TC 3.8mmol/L; LDL-C 1.8mmol/L;HDL-C,, 0.9mmol/L, **triglycerides** 1.3mmol/L). He has been on **Simvastatin** for the past 7 years, and has **complained** previously about **muscle aches**, but on this visit he states that his muscle pain has become more **troublesome**. He asks, if there is something else he can take to control his **cholesterol**.

What is the best management option you recommend for this patient?

A. Replace Simvastatin 40 mg daily with Atorvastatin 40 mg daily
B. Discontinue Simvastatin
C. Decrease dose of Simvastatin to 20 mg daily
D. Continue with Simvastatin 40 mg daily

53. A Nine-year-old **male child** with **severe asthma** came to hospital. He was **treated** with **Albuterol** via **Nibulaizer** in **emergency** and discharged with **inhaled Beclomethasone**. The family is informed to give high dose of Beclomethasone for better control of the symptom.

What **risk** does this child may **develop** if he takes **high** dose of **Beclomethasone**?

A. Hypoglycemia
B. Growth suppression
C. Cushing syndrome
D. Cataract formation

54. A 42-year-old **man** who came to the hospital was diagnosed for **moderate persistent asthma**. He had

intermittent asthma symptoms when he was **30** years of age, and he had **never** smoked. A physician planned for better control of patient's asthma symptoms with drug.

What is the most appropriate medication?

A. Tiotropium metered-dose aerosol inhalation
B. Salmeterol dry powder aerosol inhalation
C. Mometasone dry powder aerosol inhalation
D. Albuterol metered-dose aerosol inhalation

55. A 45-year-old **man** with **type 2** diabetes mellitus came to diabetic clinic for regular follow-up. He has been taking **Metformin** 1 gm daily. On laboratory investigation his Glycosylated hemoglobin test shows **10%**.

What is the most appropriate **next management**?

A. His diabetes is well controlled, continue current medication
B. His diabetes is poorly controlled, needs addition of Insulin
C. His diabetes is well controlled, reduce dose of current medication
D. His diabetes is poorly controlled, needs addition of Glyburide

56. A 19-year-old **woman** develops **secondary** amenorrhea followed by **symptoms** of **palpitations**, **nervousness**, and heat **intolerance** and **sweating**. There is a strong **family** history of **autoimmune disease**. The physical examination shows that she appears **anxious** and **sweaty**, her **pulse** is **120** beats per minute and regular, and there is a **smooth goiter** with a **soft bruit**. There is **tremor** of the **outstretched** fingers. A pregnancy test is positive. Blood was sent to the laboratory for standard investigations, including T3 and T4.

What is the most appropriate drug therapy for this patient?

A. Start low dose of Methimazole with Proponalol
B. Start low dose of Carbimazole with Proponalol
C. Start low dose of radioactive iodine with Proponalol
D. Start low dose of Propylthiouracil with Proponalol

57. A 40-year-old **female** patient, **presented** with chief complaint of **nausea**, **vomiting** and **Epigastric** pain of three weeks duration. She reported **brown colored loose stool** she has **documented Penicillin allergy**. Her physical examination shows **Epigastric tenderness** and vital signs (1-37.2°C BP-128/80mmHg, pulse-76 beats/min) Laboratory values are **Hemoglobin** of **14mg**/dl., **Hematocrit** of 41% and **fecal antigen** test is **positive** for **Helicobacter pylori** and others are within normal ranges. The attending physician decided to put her on **Helicobacter** pylori **eradication** therapy,

What triple therapy regimen is the most appropriate for this patient?

A. **Omeprazole 20mg BID Clarithromycin 500mg BID+ Metronidazole 500mgBID for 14 days**
B. Omeprazole 20mg BID+ Clarithromycin 500mgBID+ Amoxicillin 1gm BID for 14 days
C. Omeprazole 20mg BID+ Amoxicillin Ig BID + Tetracycline 500mg BID for 14 days
D. Omeprazole 20mg BID + Amoxicillin Ig BID Metronidazole 500mg BID for 14 days

58. A 50-year-old **man** is brought to the **surgical ICU** after emergency surgery. He has no past medical history. Currently, he is on **Ibuprofen** 800 mg alternating with **Oxycodone** 5 mg/ **acetaminophen** 325 mg two tablets every 8 hours for surgical site pain, **Dexamethasone** 4mg oral IV daily and **Lorazepam** I mg IV as an adjunct to **antiemetic**. An attending clinical

pharmacist has **identified** the patient is experiencing **sedation** and **amnesia**.

What medication is most likely to **cause** for the identified **ADR** in this patient?

A. Lorazepam
B. Oxycodone
C. Acetaminophen
D. Dexamethasone

59. A 38-year-old known chronic liver disease (**CLD**) patient becomes somnolent and irritable. On physical examination his abdomen is very tender to mild palpation. Vital signs (BP-68/50mmHg, PR-102 beats/min, Temperature-38.8°C,RR-18 breaths/min), oxygen saturation 98% on room air. The medical resident suspects spontaneous bacterial peritonitis (SBP) and orders a diagnostic paracentesis. Polymorph

nuclear neutrophil (PMN) of ascitic fluid is 370 cells/uL, and Serum ascitic albumin gradient (SAAG) is 1.2 gm/dL. Upon return of laboratory investigation, **physician consulted** you to select **appropriate antibiotics** for **spontaneous bacterial peritonitis**

What appropriate **empiric antibiotic** do you recommend for this patient?

A. Ampicillin Igm IV four times daily
B. Cefotaxime Igm IV daily
C. Metronidazole 1gm IV three times daily
D. Cloxacillin 500mg four times daily

60. A 62-year-old obese **man** with **PUD** and TH **DM** came for his monthly **refill**. He reports **nausea** and **vomiting** of two episodes since last visit. He has no other comorbiditics. His current medications are **Metformin BID**, **Pantoprazole** 20 mg BID and **Atorvastatin** 20 mg

daily at night. The senior physician requests your recommendation to add drugs for **cardiovascular** risk **prevention**.

What is the most appropriate drug you recommend for this patient?

A. Aspirin
B. Warfarin
C. Clopidogrel
D. Heparin

61. A **two**-year-old **child** was admitted to **hematologic clinic** with clinical **signs** of **ecchymoses**, hemarthroses, joint pain & swelling and **erythema**. On laboratory investigation the factor **VIII** level (0.01-0.05 units/mL). From family history, his grandfather, who died 6 months was found to be between ago had hemophilia A. Currently, she is worried about her son.

A hematologist diagnosed the child with **hemophilia A** and he approached you to select appropriate **first line treatment** for this **child**.

What will be the most appropriate **first line** intervention for this child?

A. Surgical intervention
B. Recombinant factor VIII
C. Desmopressin therapy
D. Plasma-derived products of factor VIII

62. A 36-year-old **man** has been taking **phenytoin** 100mg PO TID for his **epilepsy** for the last 12 months. But, recently he has been developing symptoms of fatigue, pallor, weakness and dyspnea on exertion. On further evaluation, neurologist requested you to evaluate for adverse drug reaction (ADR) from phenytoin. On your evaluation by using **Naranjo ADR**

assessment tool, the Current signs and symptoms of anemia is possibly from **phenytoin**.

What is the most appropriate intervention in management of **ADR** in this patient?

A. Initiate Vitamin B_12
B. Initiate Folic acid
C. Initiate Iron-dextran
D. Initiate Epoctin alpha

63. A 68-year-old **woman** presents to hospital for follow up at **orthopedic** clinic **Acetaminophen** trial therapy has failed to relief her **Osteoarthritis**. She is also taking **Amlodipine** 5mg BID for the treatment of **hypertension**.

What is the appropriate next drug therapy **initiated** in this patient?

A. Meloxicam
B. Tramadol
C. Nabumetone
D. Indomethacin

64. A 49-year-old **professional** singer was admitted to internal medicine ward with a diagnosis of **Graves's disease**. She was initially treated with **Carbimazole**, but developed a severe **generalized rash**, which necessitated withdrawal of the drag A similar rash occurred within 2 weeks of starting propylthiouracil (**PTU**). She is overtly thyrotoxicosis with a **blood pressure** of 160/50 mmHg, a **pulse** of 110 beats/min and a **large thyroid** gland with a **vascular** bruit. Laboratory results show an **elevated** free **Thyroxine** and an **undetectable** thyroid-stimulating hormone.

What is the most appropriate treatment option for this patient on admission?

A. Propranolol

B. Propranolol and lithium

C. Propranolol, lithium and surgical removal

D. Propranolol, lithium and radioactive iodine

65. A 27-year-old **woman** comes with a 3-month history of **intermittent heat intolerance**, sweats, tremor, and severe muscle weakness, which has limited her ability to climb stairs. She is also bothered by the pounding of her heart and inability to keep food and liquids down. She previously received iodide drops with symptomatic improvement, but her disease recurred despite its continued administration. Thyroid function test shows total Thyroxine of 6 mcg/dL (normal, 5-12); free Thyroxine of 2 ng/dl (normal, 0.7-1.9); thyroid-stimulating hormone <0.01 punits/mL (normal, 0.5-4.7), and a random blood glucose of 350 mg/dL (normal, 70-110). Her current BP is 180/90 mmHg with a pulse of 125 beats/minute, and a diffusely enlarged

thyroid gland that is about **four** times normal (about 100 gm).

What is the next most appropriate **intervention** in this patient?

A. Initially with thioamides followed by iodides
B. Initially with thioamides followed by surgery
C. Initially with thioamides followed by radioactive iodides
D. Initially with thioamides followed by beta-blockers

66. A hospital pharmacy **procurement** team was requested to purchase **digoxin** a month ago however, the team **failed** to **avail** the drug on time. As a result, an increased hospitalization of **heart failure** patients was observed.

Which **ethical** principle is most likely **violated** by the team?

A. Autonomy
B. Honesty
C. Justice
D. Non-maleficence

67. A pharmacist who works in a regional PPSA hub, received procurement requests from three referral hospitals. However, the **stock** was **insufficient** to fulfill all the three requests. Finally, the pharmacist used population size and disease morbidity to calculate the quantities of medicines to be received by each hospital.

What is the most relevant ethical principle in the pharmacist's decision?

A. Autonomy
B. Beneficence
C. Non-maleficence
D.Justice

A pharmacist seeks justice in the distribution of health resources. When health resources are allocated, a pharmacist is fair and equitable, balancing the needs of patients and society.

68. A **diabetic** patient visited a pharmacy to **refill** a prescription containing **Glibenclamide** 2.5 mg/day. The patient was also taking **Ciprofloxacin** (500 mg bid) for the past two days and decided to discontinue the antibiotic. Despite the pharmacist's attempt to explain the possible consequences of such a decision, the patient **refused** to take **ciprofloxacin** or an alternative antibiotic. Finally, the pharmacist accepted the patient's decision and dispensed the glibenclamide.

What is the most relevant **ethical principle** in the pharmacist's reaction?

A. Autonomy

B. Transparency

C. Confidentiality

D. Accountability

In general, competent adult patients should be treated as autonomous decision-makers who have the legal and ethical right to make informed decisions about the direction of their own medical care, unencumbered by paternalistic interference.

69. A patient visited a community pharmacy with an authorized prescription for **morphine** 10 mg. The pharmacist **checked** the pharmacy records and found that the patient has **bought** 50 tablets of **the** same drug 3 days earlier.

What would be the most likely **ethical** course of action for the pharmacist?

A. Dispensing the drug as prescribed

B. Refusing to dispense the drug

C. Contacting the prescriber for confirmation

D. Reporting the case to the relevant authority

70. A 55-year-old **woman** with **complaints** of **palpable lump**, **nipple discharge** and **edema**, redness and **warmth** on her **breast** came to a hospital. Her history shows that she gave no bath until now and she saw her menses at age of 10. She also smokes cigarette and drinks alcohol. The **biopsy** was taken and test was done which **revealed** a breast cancer.

What are the conditions that **show** this patient has breast cancer?

A. Nulli- parity, smoking cigarette and being age 55 years

B. Seeing menses at age of 10 years and nulli-parity

C. Smoking cigarette, drinking alcohol and null-parity

D. Smoking cigarette and seeing menses at age of 10 years

71. A 50-year-old **woman** with a **diagnosis** of **colorectal cancer** was admitted to a hospital. The medications ordered for her colorectal cancer includes FOLFOX (Fluorouracil, Leucovorin, and Oxaliplatin).

What is the **predicted** importance of **Leucovorin** in this patient?

A. Because of its chemotherapeutic effect
B. To counter act the adverse effect of Fluorouracil
C. To increase the absorption time of fluorouracil
D. To decrease the adverse effect of Oxaliplatin

72. A hospital drug and therapeutics committee wants to prepare an **essential** medicines list.

What is the most relevant factor in the selection of medicines to be included in the list?

A. Availability in the international market
B. Unit prices of the medicines
C. The local disease pattern
D. The national disease pattern

73. A pharmacist working in a hospital's **inventory management** team wants to select pharmaceuticals for **procurement** in the **next** budget year. The pharmacist wants to **purchase** all pharmaceuticals in the **essential** medicine list. In the process, the pharmacist has listed all vital pharmaceuticals to be purchased. However, the allocated **budget** is **inadequate**.

What is the most appropriate next step?

A. Select low cost essential medicines
B. Select low cost desirable medicines
C. Select slow moving medicines
D. Select fast moving medicines

74. A pharmacist member of a hospital drug and therapeutics committee (UTC) recommended the preparation of an **essential medicines list** and the use of the list in the procurement process ofer members of the **DTC** wanted to get **justifications** on the advantages of using the essential medicines list during procurement.

What is the reason of using essential medicines list in the procurement process?

A. Limiting the quantity of each medicine to be procured
B. Ensuring availability of medicines at the hospital
C. Helping the DTC to efficiently hire health professionals
D. Limiting procurement to products from local suppliers

75. A **hospital** drug and therapeutics committee (**DTC**) assigns a pharmacist to help with the selection of medicines for inclusion in the procurement list. For each medicine, the pharmacist wanted to get information on indications for use, dosage schedule, contraindications, side effects and information that should be given to the patient.

What is the most appropriate **source** of **information** that should be used?

A. Hospital formulary manual
B. Hospital essential medicine list
C. Standard treatment guideline

D. National essential medicine list

76. A primary hospital **utilized** 300, 250, 200 and 450 Packs of **Ceftriaxone** injection in September, October, November and December, respectively. The lead time for the product is two months with safety stock of 600 packs. The **procurement** period is also six months.

What would be the maximum stock level of Ceftriaxone injection?

A. 1800 pack
B. 3000 pack
C. 2400 pack
D. 4200 pack

77. Assume, you are a hospital pharmacist **engaged** in managing the hospital **inventory**. The lead time for a product is **less** than **three** hours.

How is the **safety stock** and average monthly consumption related with the lead time?

A. Safety stock is not required since the lead time of the products is zero
B. The safety stock is equal to the average monthly consumption
C. The safety stock is twice the average monthly consumption
D. The lead time doesn't affect the maximum stock level

78. A 34-year old **male** who was **diagnosed** with **knee Psoriasis** and put on cream BID six weeks back, visited the outpatient department with **complaints** of clinical

remission despite he applied as per the direction given before.

For which drug therapy should the pharmacist give a **priority** for this patient?

A. Adherence
B. Effectiveness
C. Safety
D. Indication

79. A **Five**-year-old **child** was **diagnosed** with **drug-induced skin reaction** secondary to **Cephalexin** 250mg/5ml BID use for **community acquired pneumonia** since two days back. The patient was **febrile** and the **eruption** was very **painful** and **itchy**. The **dermatologist** on duty request a pharmacist for possible recommendations on the drug being taken by the child.

What would be the most appropriate recommendation for this patient?

A. Initiate analgesic agent
B. Avoid sunlight exposure
C. Discontinue with the medication
D. Use antihistaminergic agent

80. A 43-year-old **female** patient was diagnosed with **stage-II breast cancer**. The general surgeon in charge conducted a breast-conserving surgery as her breast was big in size. Then, he sent her back home with an appointment after three months. The **oncology** pharmacist assessed for the possibility of **adjuvant** therapy initiation for the **residual cancerous** tissue.

What drug therapy should the pharmacist give a priority for this patient?

A. Adherence
B. Effectiveness
C. Safety
D. Indication

81. A 28-year-old **female** patient **presented** with a **single painless**, **palpable lump** in her **right** breast. The fine-needle aspiration cytology showed malignant changes of the cells. Therefore she was **diagnosed** with **early** stages breast cancer and put on **Doxorubicin** 60 mg/m² IV and **Cyclophosphamide** 600 mg/m² IV to be repeated every 21 days for **four** cycles **after** surgical **resection** of the **lump**.

What would be the **main purpose** of initiating these chemotherapeutic drugs?

A. Cure the disease state
B. Conserve the breast tissue

C. Control the sign and symptoms
D. Decrease the disease progression

82. 43-year-old known **diabetes** mellitus man visited an **OPD** for his regular follow up. He was taking **Metformin** 1000 mg BID for the last three months in addition to life style modifications. His **respiration** is **18/min**, **blood pressure** 115/80 mmHg, **pulse rate** 68/min. Laboratory result shows that K 4.8 meq/L (normal range: 3.5-4.5 meq/L), Na 143 meq/L (normal range: 136-146 meq/L), estimated GFR 48 ml/min/1.73m^2, BUN 28 mg/dL (normal range: 7-20 mg/dL) and **fasting** blood **glucose** 150 mg/dL. Based on the findings, the **physician planned** to **increase Metformin** to 1500 mg BID and give appointment for three months a waiting of the clinical pharmacist's recommendation.

What is the most appropriate recommendation the pharmacist should deliver?

A. support the physician's decision
B. Add insulin to the current regimen
C. Add Glibenclamide to the current regimen
D. Discontinue with Metformin and initiate Glibenclamide

83. A 30-year-old woman was presented to an emergency department with signs and symptoms suggestive of diabetic ketoacidosis. Then, the clinical team started to manage the patient with regular insulin and intravenous fluids.

What is the most likely monitoring parameter during acute patient management?

A. Serum insulin level
B. Serum potassium level
C. Serum alkaline phosphatase
D. Serum low density lipoprotein

84. A 26-year-old **woman** visited an outpatient department with a complaint of **Epigastric** pain of three days duration. She further reports that the pain is accompanied by **heart burn**, belching and bloating and it usually awakens her from sleep between 12:00-3:00 AM. Based on the findings, the physician **suspected bacterial infection**.

What is the most appropriate **diagnostic** test for this patient?

A. Urea breath test
B. Stool guaiac test
C. Fecal antigen test
D. Antibody detection test

85. An 18-year-old boy presented to a clinic with a complaint of **dyspnea** and **coughing** limited his ability to cope up with his basketball teammates. He states that "it is worse playing outdoors and worsens in recent days than a month ago". He has a history of experiencing several attack of **bronchitis** as a young child and the teammate's match usually lasts 90-95 minutes.

What is the most appropriate preventive therapy for this patient?

A. Albuterol 10 minutes before exercise
B. Salmeterol 10 minutes before exercise
C. Formoterol 10 minutes before exercise
D. Terbutaline 10 minutes before exercise

86. A 67-year-old **man** was presented to an emergency department with a complaint of **excessive bleeding** from minor bruising and cuts while shaving his face. The patient medication history shows that he has been

taking **Warfarin** for **atrial** fibrillation for **three** years, **Beclomethasone** and **Salbutamol** for his **asthma** for six months. In addition, he started an oral Theophylline three weeks back because of increasing in **frequency** and **severity** of **asthma** symptoms. The laboratory result indicates that international normalized ratio (INR) of 3.5 (normal range: 2.5-3.5).

What is the most appropriate management for this patient?

A. Monitor INR
B. Discontinue with Warfarin
C. Administer vitamin K
D. Discontinue with Theophylline

87. A 28-year-old known Type-I diabetes woman visited an outpatient department complaining bilateral foot pain, which she described as a burning and tingling sensation. She is on Insulin therapy for the last six

years and currently has poor glycemic control. An examination of her feet reveals that cool extremities with absent pulses, reduced vibration perception and loss of 10-g monofilament pressure sensation.

What is the most likely assessment in favor of her presentation?

A. Peripheral neuropathy
B. Deep vein thrombosis
C. Autonomic neuropathy
D. Peripheral arterial disease

88. A 45-year-old male patient presented to a health center with fever, muscle pain. The patient mentioned of having unprotected sexual intercourse investigation, his antibody feet revealed an HIV infection.

What is the most likely status of this disease?

A. Latency period
B. Asymptomatic stage
C. Symptomatic disease
D. The acute viral syndrome

89. A 35-year-old pregnant woman who is taking anti-tuberculosis drugs comes with a compliant of numbness in her feet. The physician suspected Isoniazid indicated **peripheral neuropathy** and prescribed **pyridoxine** 25mg PO daily as a treatment.

What is the mechanism behind her peripheral **neuropathy**?

A. Increasing production of GABA
B. Decreasing the concentration of glutamate
C. Inhibiting the enzyme N-acetyltransferase-2
D. Depleting neuronal pyridoxal 3-phosphate

90. A 43-year-old **woman** with **schizophrenia** has **gained** 5.5 kg weight with an in abdominal girth since she started taking **Risperidone** over the past 3 months.

For what clinical condition will the **woman** most likely be exposed?

A. Hypertension
B. Diabetes mellitus
C. Congestive heart failure
D. Ascites from liver failure

91. A 57-year-old **man** with long term **schizophrenia** has been maintained on a new anti **psychiatric** drug. Now he reports that there are frequent incidences of **seizure** since he started taking medication. All other findings are normal.

What is the most likely drug that is responsible for his complaint?

A. Clozapine
B. Olanzapine
C. Risperidone
D. Ziprasidone

92. A 35-year-old high school **teacher** began to experience mood changes in recent days. He losing **interest** in his work and lost the desire to play his daily tennis match. He preoccupied with feelings of guilt, worthlessness, and hopelessness. In addition to psychiatric symptoms, the patient complained of muscle aches throughout his body. Physic and laboratory tests were unremarkable. After six weeks of **therapy** with **Fluoxetine**, symptoms resolved. However, the patient again **complains** of sexual **dysfunction**.

What will be the most useful initial approach to manage his compliant?

A. Wait and see
B. Reduce the dose
C. Initiate Sildenafil
D. Change to other antidepressant

93. A 28-year-old man with **manic-depressive disorder** has been maintained on **Lithium carbonate** for two years and his mood was stable in those years. Now, he reports a gradual Onset of **fatigue**, weight gain and cold **intolerance**.

What is the most likely laboratory test to diagnosis his problem?

A. Thyroid-stimulating hormone
B. Hepatic function panel
C. Glucose tolerance test
D. Hematocrit

94. A 10-year-old **boy**, who is on an **antiepileptic** drug for one year for **generalized tonic seizure** visits a dentistry clinic **complaining** an **overgrowth** of **gum tissue**. On assessment, other findings are unremarkable. The dentist in charge consults a clinical pharmacist for possible association with the patient's **antiepileptic** drug that he could not remember by its name.

What is the most likely drug the pharmacist would **suspect**?

A. Sodium valproate
B. Phenobarbitone
C. Carbamazepine
D. Phenytoin

95. A 45-day-old child is presented to an emergency department with **irritability** and **fever**. **Culture** showed **streptococcus pneumonia** which was diagnosed as

bacterial meningitis. The physician in charge prescribed **Ceftriaxone** 100 mg/kg BID for 14 days and **Dexamethasone** 0.6 mg/kg/day to be given 20 minutes before the first antibiotic dose and QID for 02 days.

What is the most likely drug therapy problem that needed additional **Dexamethasone** needed?

A. Increase in neurologic sequel
B. Decrease in bactericidal activity
C. Increase in antibiotic penetration
D. Decrease in antibiotic penetration

96. A 45-year-old **man** presents to a hospital with compliant of **cough** of two days duration. The patient has no previous medication and medical history. On physical examination, his pulse rate is **70/min**, respiration is 16/min, blood pressure is 110/70 mmHg, and the patient is oriented to time, person and place. On laboratory investigation, blood urea nitrogen is 12

mg/dl (Normal range: 8-23 mg/dL). The presumptive diagnosis **is community acquired pneumonia**.

What is the most appropriate initial therapy for this patient?

A. Benzyl penicillin 3 million IU LV. QID for 7 days
B. Amoxicillin 500 mg P.O. TID for 7 days
C. Ceftazidime 1gm IV. TID for 10 days
D. Ceftriaxone 1gm IV BID for 7 days

97. A 25-year-old **woman** presents to a hospital with a complaints of **worsening pain**, redness, and **swelling** on her left leg of three days due to an abrasion that occurred after a falling accident. During the past one and half days, the leg becomes increasingly painful and tight the patient has no past medical and medication history. On examination, the area is red, **painful**, **warm** to touch, and there is no discharge, fever or chills. The presumptive diagnosis is mild cellulites'.

What is the most appropriate **empirical** therapy for this patient?

A. Ceftriaxone 1g IV BID for 5 days
B. Amoxicillin 500 mg orally TID for 7 days
C. Cloxacillin 500 mg orally QID for 7 days
D. Penicillin VK 250 mg orally TID for 7 days

98. A 20-year-old **sexually active male** patient is diagnosed for **gonococcal urethritis** and came with a prescription containing a certain drug with the appropriate dosage. The pharmacist working in the dispensary tells the patient to take the drug with or without food.

What is the most likely drug dispensed for this patient?

A. Azithromycin
B. Clarithromycin
C. Erythromycin

D. Vancomycin

99. A 25-year-old **female** patient diagnosed with lymphogranuloma venereum and anemia comes to a pharmacist with a prescription that requests for Doxycycline 100 mg PO BID for three weeks and a certain another drug. The pharmacist advises the patient to take the other drug an hour before or two hours after taking the Doxycycline.

What is the most likely drug that is dispensed with Doxycycline?

A. Cyanocobalamin
B. Ferrous sulfate
C. Folic acid
D. Iron dextran

100. A patient with stable angina comes with a prescription containing sublingual **Nitroglycerine** with **appropriate** dosage. The pharmacist on duty is concerned about the tolerance issue associated with nitroglycerine and wants to tell his patient important information that can enhance the efficacy of the prescribed drug.

What is the most pertinent advise the pharmacist could give in this case?

A. Increase drug's daily dose
B. Take the drug regularly
C. Have a drug free period
D. Stop this drug abruptly